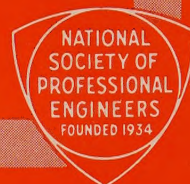


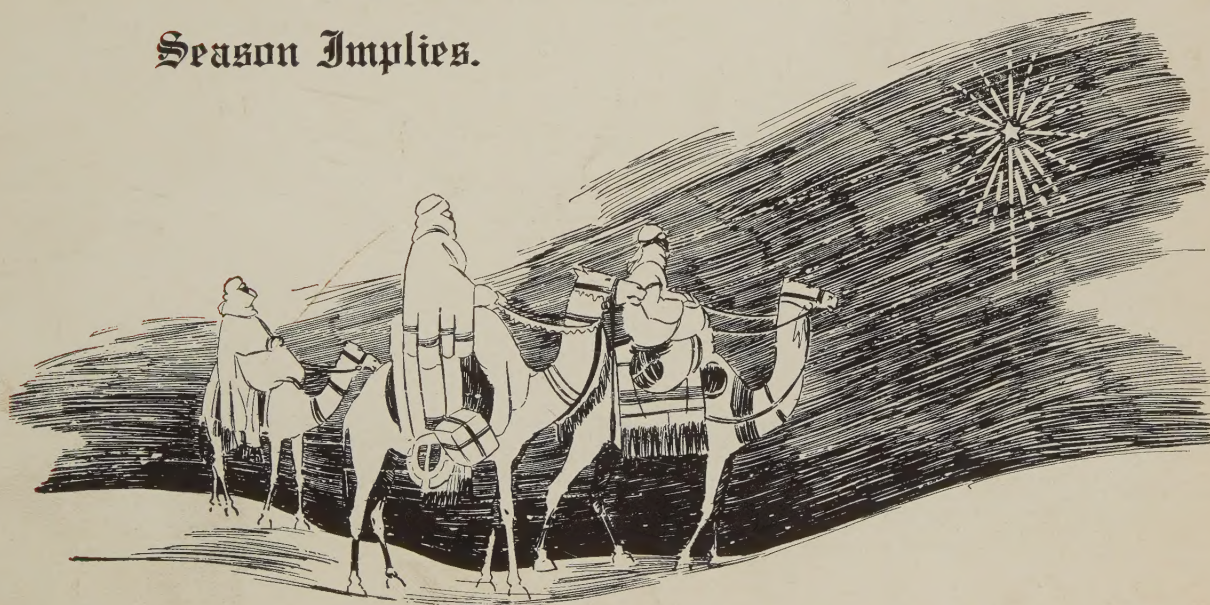
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# *the* **ILLINOIS ENGINEER**



The Illinois Society of Professional Engineers  
Extends to Its Membership Best Wishes  
for Everything that the Christmas  
Season Implies.



THE ILLINOIS ENGINEER, DECEMBER, 1951—VOLUME XXVII, NO. 12

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Affiliated with the National Society of Professional Engineers

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# Of Professional Interest

## THE ILLINOIS ENGINEER—THIS MONTH

The NSPE is a "grass roots" organization in the fullest meaning of that much-abused term, but as a member of the National Society are you fully aware of what it is trying to do for you? You pay your dues, but having paid them, do you follow through to make sure your money is properly spent? Read the report of your National Director concerning the NSPE Board Meeting held in Kansas City, November 9 and 10, last.

"Christmas was close at hand, in all his bluff and hearty honesty; it was the season of hospitality, merriment, and open heartedness; the old year was preparing, like an ancient philosopher, to call his friends around him, and amidst the sound of feasting and revelry to pass gently and calmly away. . . .

"And numerous indeed are the hearts to which Christmas brings a brief season of happiness and enjoyment. How many families whose members have been dispersed and scattered far and wide, in the restless struggles of life, are then re-united, and meet once again in that happy state of companionship and mutual good-will, which is the source of such pure and unalloyed delight, and one so incompatible with the cares and sorrows of the world, that the religious belief of the most civilized nations, and the rude traditions of the roughest savages, alike number it among the first joys of a future state of existence, provided for the blest and happy! How many old recollections and how many dormant sympathies, does Christmas awaken!"—Christmas at Dingley Dell, from, "Pickwick Papers." EDITOR.

## ANNUAL HIGHWAY CONFERENCE ANNOUNCED

The 38th Annual Illinois Highway Conference is to be held in the Illini Union at the University of Illinois, Urbana, on February 19, 20, and 21, 1952. A feature planned for the coming conference is the devotion of the last day to classroom instruction on the subjects of soils, drainage, bituminous construction, concrete construction, and gravel and crushed stone construction. Members of the program committee for the conference are:

W. F. Jeschawitz, Jr., Superintendent of Highways, DeWitt County; J. F. Kearns, City Engineer, Champaign, Illinois; W. A. McCree, Illinois Division of Highways; Ellis Danner, University of Illinois; W. S. Pollard, Jr., University of Illinois.

Liberty has never come from the government. The history of liberty is the history of limitations of governmental power, not the increase of it.

—Woodrow Wilson

## The Christmas Story

Second Luke: 4-14  
(King James Version)

4. And Joseph also went up from Galilee, out of the city of Nazareth, into Judaea, unto the city of David, which is called Bethlehem, (because he was of the house and lineage of David). 5. To be taxed with Mary his espoused wife, being great with child. 6. And so it was, that, while they were there, the days were accomplished that she should be delivered. 7. And she brought forth her first born son, and wrapped him in swaddling clothes, and laid him in a manger; because there was no room for them in the inn. 8. And there were in the same country shepherds abiding in the field, keeping watch over their flock by night. 9. And, lo, the angel of the Lord came upon them, and the glory of the Lord shone round about them: and they were sore afraid. 10. And the angel said unto them, Fear not: for behold, I bring you good tidings of great joy, which shall be to all people. 11. For unto you is born this day, in the city of David, a Saviour, which is Christ the Lord. 12. And this shall be a sign unto you: Ye shall find the babe wrapped in swaddling clothes, lying in a manger. 13. And suddenly there was with the angel a multitude of the heavenly host, praising God, and saying, 14. Glory to God in the highest, and on earth peace, good will toward men.

## COST OF LIVING INDEX

The correlation factor to be applied to the I. S. P. E. Schedule of Minimum Fees and Salaries was 187.8 for October, 1951. The factor is based upon the U. S. Department of Labor's most recent Consumer Price Index.

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## READ THE ADVERTISEMENTS

### SUBSCRIPTION RATES

\$2.00 per year in advance to members of the Illinois Society of Professional Engineers. \$4.00 per year in advance to non-members in U.S.A. and its possessions, Canada, and Mexico. Foreign \$6.00. Single copies 40c. Published by the Illinois Society of Professional Engineers, Inc., at 631 East Green Street, Champaign, Illinois.  
Entered as Second Class Matter April 27, 1949, at the Post Office, Champaign, Illinois.



**VOX SECRETARII**

Assistant Secretary Roberts

**Christmas Prayer**

Give me the vitality and the industry to do a full day's work every day.

Give me the originality and the dexterity to act faster than my competitors.

Give me the capacity and the ability to deliver more than I receive.

Give me the honesty and the sincerity to fairly judge my fellow man and his work.

Give me the simplicity and the graciousness to think clearly.

Give me the patience and willingness to do irritating work well.

Give me the courage and good sense to change my mind.

Give me the poise and humbleness to handle personal success.

Give me the tenacity and steadfastness to finish every hard job.

Give me the faith and loyalty to have confidence in my associates.

Keep me in good health, guide me to be a good father, and make me a solid citizen.

**FREAK CRASH**

Duane R. Chicoine, member Central Illinois Chapter, Decatur, saw his car damaged \$200 in a freak accident one day recently. He was passing a truck which was towing an air compressor. The compressor broke loose and crashed against the Chicoine car.

**PRESIDENT GUNLOCK INDORSES  
TUNNEL LINK**

Virgil E. Gunlock, commissioner of subways and super-highways, Chicago, has stated that Chicago's down-town, even with completion of super-highways and extension of the subway system, will still require an underground Loop for street cars and buses.

He strongly indorsed a proposal, first advocated by the Chicago traction and subway commission in 1916, for a tunnel for street cars from the west side to pass under the Chicago river and under the Loop to a turn-around in Grant park.

The human race must be getting stronger. Back in the early thirties it took two men to carry ten bucks' worth of groceries. Now any little boy can carry that much.

**CENTENNIAL OF ENGINEERING**

With figures like Herbert Hoover, Charles F. Kettering of General Motors, and B. F. Fairless, president of U. S. Steel, prominent on its directorate, the Centennial of Engineering to be held in Chicago in 1952 has reached a stage of development indicating that it will be one of the most important demonstrations of technical progress ever staged.

In announcing a full-scale launching of plans for the celebration which will extend from July 1 to September 30 next year, Lenox R. Lohr, Centennial president, reported that it already has the active participation of 41 national and international engineering bodies. At least 30 others will hold special meetings or send token delegations. Typical of the world-wide scope of the event is announcement that among its participants will be the International Commission on Irrigation and Drainage which has its headquarters in Delhi, India.

Actual attendance at the professional conferences during the celebration is expected to bring to Chicago more than 50,000 engineers, industrialists and others in kindred fields from all sections of the Western Hemisphere. There will also be sizable groups from the leading European nations.

Lohr stated that, unlike events sponsored by Engineering bodies in the past where the programs have been generally restricted to highly technical matters, the 1952 celebration will have a twin character. While plans call for one of the most diverse series of technical sessions ever staged at one place, the general public for the first time will be brought prominently into the project on a big scale. This will be accomplished through a historic pageant expected to play to hundreds of thousands in a summer-long run, and an especially built exhibit that will continue on display for at least five years.

Occasion for the Centennial will be the one-hundredth anniversary of the founding of the American Society of Civil Engineers, oldest engineering society in the United States. However, instead of being limited to this one group, it has been seized upon by practically all other branches of engineering as an ideal occasion to pool their forces in depicting the history and achievements of engineering in all its phases through an integrated program in which each will have its part.

In planning the Centennial, it is hoped to make it a means of awakening the public to all that engineering has meant not only in industry but in every other sphere of physical progress over the past century.

Many technical and engineering societies including the N.S.P.E. and the I.S.P.E. will have a share in this important undertaking.

The sense of humor is the oil of life's engine. Without it the machinery creaks and groans. No lot is so hard, no aspect of things so grim, but it relaxes before a hearty laugh.

—G. S. Merrian

**67th Annual Meeting****April 3, 4 and 5, 1952****Hotel Pere Marquette, Peoria**



# Report of the National Director

N.S.P.E. Board Meeting at Kansas City, Missouri, November 9-10, 1951

W. A. OLIVER

The N.S.P.E. held its regular Fall Board Meeting in Kansas City on November 9th and 10th as guests of the Western chapter of the Missouri Society of Professional Engineers. Of 38 member societies, 34 had representatives at the meeting. Including national officers, there were 43 voting members present.

## Unity of the Profession

Unity of the profession was discussed in its most recent developments by Mr. Alex Van Praag who has represented the N.S.P.E. on the Exploratory Group. The Exploratory Group is made up of 15 representatives of engineering societies. There were originally 16, but one society withdrew because it did not consider that the matter was within the province of its activities.

Mr. Van Praag reported that the last meeting had been held in September, 1951, at which the four proposed plans for unity had been discussed and voted upon. In brief, the four plans are as follows:

**Plan A.** The Engineers' Joint Council (E.J.C.) plan. This consists of a federation of engineering societies to which representatives would be sent from the governing bodies of the member societies. The member societies would finance the council. The principal objection to this plan has been the lack of control of council by the "grass roots" members. (E.J.C. is an existing organization made up of representatives from the so-called founder societies.)

**Plan B.** Modified EJC Plan. This plan was proposed in order to "throw a sop" to the group who believe in direct representation. The plan proposes to have some control of the governing body by the individual member. The primary objections to the EJC plan are valid with respect to this plan.

**Plan C.** The Merger Plan. This plan was proposed by the American Institute of Electrical Engineers in their effort to express the majority thinking among their membership. The plan proposes to merge N.S.P.E. and E.J.C. The member state societies of the N.S.P.E. would maintain the status quo. Representatives from the member societies would be sent to the governing body of the Unity Organization, a portion of the individual member's dues would be paid into its treasury. The technical societies would also be represented as they now are on E.J.C. and funds from their treasuries would be given for the support of the over-all organization. This might have been called the compromise plan and those who hold to the philosophy of the N.S.P.E. could possibly give it their support with the idea in mind that the resulting Unity Organization would eventually grow into an organization conforming essentially to Plan D, the N.S.P.E. Plan.

**Plan D.** The N.S.P.E. Plan. This plan presents the conviction that there should be an over-all united en-

gineering profession including all engineers in all branches of the profession. The governing body should be made up of engineers elected directly by and from the individual membership. Its treasury should be supported by direct assessment upon the membership. Hence the individual member would have direct and full control of all policies and activities of the over-all organization. Whether the Unity Organization is called the N.S.P.E. or by some other name is of minor importance. What does matter is that it must be controlled directly from the "grass roots." The N.S.P.E., as was to be expected, has taken a united stand for this plan and any retreat which may become necessary through compromise will be made only because of the belief that such compromise will make the general acceptance of Plan D a matter of swifter accomplishment in the future.

As reported by Mr. Van Praag in Kansas City, the representatives to the Exploratory Group voted as follows with regard to the four plans outlined above. Four societies favored Plan A, A.S.C.E., American Chemical Society, American Institute of Naval Architects and Marine Engineers, and the American Association of Engineers; one society favored Plan B, American Society of Mechanical Engineers; one favored Plan C, American Institute of Electrical Engineers; one favored Plan D, the N.S.P.E.; four expressed no preference, American Society of Engineering Education, American Institute of Mining and Metallurgical Engineers, the Refrigeration Engineers, and the Heating and Ventilating Engineers; three were absent, the Radio Engineer Group, the Aeronautical Engineers, and the Illuminating Engineers, making a total of 15.

Please note, that while the larger number of the society representatives voted for Plan A and the Committee subsequently voted to report as favorable to that plan, the four society representatives voting for the plan did not represent a majority of the individual members among all of the societies represented on the Exploratory Group. The action taken by the Board in Kansas City can best be described as, "Hold everything until further study is possible." Another meeting of the Exploratory Group is to be held in December and if it seems desirable and necessary after the outcome of that meeting has been considered, a minority report has been authorized by the N.S.P.E. Board.

## Engineering Centennial

The National Director from Illinois was instructed by the I.S.P.E. Board at its November 3rd meeting "to invite and to urge the N.S.P.E. to participate in a major and leading role with other major engineering societies celebrating the Engineering Centennial in Chicago from September 3-13, 1952." A great deal of interest was shown in this proposal by the N.S.P.E. Board. In spite



of the fact that the Centennial has been in process of planning for nearly two years, it has apparently been poorly publicized, because a number of the members of the N.S.P.E. Board had heard nothing of it. President Gunlock appointed a committee to handle the matter for the Illinois Society last April. The Committee consists of Frank W. Edwards, Chairman, George L. DeMent, and W. A. Oliver.

The National Board voted to hold an N.S.P.E. dinner and Executive Committee meeting for one day during the September 3rd to 13th period in 1952. This will be a golden opportunity for the N.S.P.E. to bring its story to the many thousands of engineers (fifty thousand estimated) attending the ten-day celebration.

### N.S.P.E. and the Unions

Certain engineer unions in the Pacific Northwest have been attempting to make capital out of the "Statement of Principles regarding Collective Bargaining by Professional Employees" as adopted by the N.S.P.E. Board at the Boston meeting of June, 1950.

The principles adopted at the Boston meeting are as follows:

1. It is definitely unprofessional for a professional engineer, professionally employed, VOLUNTARILY to join a heterogeneous labor union, dominated by, or obligated to, nonprofessional groups. As stated by the Society, through its Board of Directors at Oklahoma City in September, 1948, "The individual responsibility and independent judgment required of a Professional Engineer are incompatible with the regimentation fundamentally inherent in unionization."

Nothing in this statement of principle shall be construed as a criticism of engineers who may be forced to join a labor union, against their will, but engineers in this predicament should seek to extricate themselves by due process of law.

Nothing in this statement of principle shall be construed as a criticism of engineers-in-training, who voluntarily join a labor union when, as a step in their practical engineering training, they are temporarily employed in non-professional or sub-professional work, where their fellow workers are organized. When promoted to professional responsibilities, however, the engineer cannot continue his labor union affiliations without sacrifice of professional status.

2. Organizations of professional engineers for collective bargaining, in any form, are to be deplored, although their existence, for the present, may be condoned under certain circumstances.

When engineers are treated collectively by an employer they may be compelled to deal with him on the same basis. Employers should appreciate that engineers have individual capacities and talents which should be considered on an individual basis, that the compensation of an engineer should be in proportion to the value of his services and not based on his age, his degrees, or any other yardstick that can be applied collectively, and that an engineer's working conditions should conform to the nature of his work rather than to any general pattern applicable to employees engaged in routine tasks that are subject to standardization.

When employers generally are persuaded that professional employees must be viewed as individuals and not in groups or classes, then N.S.P.E. may condemn collective bargaining by professional engineers, without qualification. In the meantime, we advise the young engineer that the existence of collective bargaining by professional engineers in an industry jeopardizes his professional status. Either the employer fails to appreciate the professional nature of his engineers' work,

or the employees themselves are not adhering to professional concepts. Therefore, professional engineers and engineers-in-training should not seek employment where professional engineers, professionally employed, bargain collectively.

The unions have publicized certain parts of Articles of the above principles as follows:

"Organizations of professional engineers for collective bargaining in any form, are to be deplored. . . . When employers generally are persuaded that professional employees must be viewed as individuals and not in groups or classes, then N.S.P.E. may condemn collective bargaining by professional engineers without qualification. In the meantime, we advise the young engineer that the existence of collective bargaining by professional engineers in an industry jeopardizes his professional status. Therefore, professional engineers and engineers-in-training should not seek employment where professional engineers professionally employed, bargain collectively."

Obviously, a full consideration of the principles as stated will show that the N.S.P.E. recognizes the fact that under certain conditions the young engineer will be forced to affiliate with a union in order to obtain or hold a position during his sub-professional years. The necessity of such an affiliation is fully understood by the N.S.P.E., but it is certainly in order to express regret that such conditions do exist. Perhaps Articles 1 and 2 could have been combined in such a way that the unions would have found it more difficult to make misleading extractions.

### Legislative Committee

The important Legislative Committee reported continuing activity on the part of the N.S.P.E. at the national level. Progress in legislation of direct concern to engineers has moved slowly because the Congress has been busy trying to reach decisions dealing with National Security. There has been little indication of activity for or against such matters as the Taft-Hartley Act, reorganization of government departments under the Hoover Report, etc.

Society activity with legislation has been fully reported in the Legislative Bulletins which have been issued monthly by the Washington office. These may be obtained by addressing a request to national headquarters. However, it should be pointed out here that items appearing in the Bulletin which have been considered to be of particular importance have been reprinted in the ILLINOIS ENGINEER.

### Committee on Registration

The Registration Committee reported continuing activity on the part of the National Council of State Boards of Engineering Examiners (NCSBEE) in the direction of uniformity of procedures in registering engineers in the different states. It has been recognized that each state has its own law which governs the qualifications of an applicant but it is also quite often possible for a state board to alter its procedures and still stay within the law. The NCSBEE has compiled and published a "Proposed Syllabus of Examinations" which appears to be the first step toward such uniformity. The



committee continues to urge closer cooperation between the examining board and the state society of professional engineers.

### Public Relations Committee

The Public Relations Committee reported that the fund raised by voluntary contributions now totals \$30,-088.27 obtained from 4,511 contributors. The Public Relations Council retained to carry out this program has prepared a questionnaire, "How to Improve Engineering-Management Communications." This has been sent out to top management people as selected by the member chapter groups of the N.S.P.E. The results will be analyzed and a second questionnaire will be prepared and sent out to industry by February 15, 1952. These questionnaires point up the importance of engineering employees to industry.

### Ladies Auxiliaries Committee

The Ladies Auxiliaries Committee has prepared a model constitution for the guidance and assistance of state societies where such auxiliaries are being organized. One such auxiliary has been formed in Illinois, in the Central Illinois Chapter.

### Committee on Salary and Fee Schedules

The Committee on Salary and Fee Schedules reported a second interim report in process of preparation. This statement will be of interest to other groups who are making studies with regard to salaries at the present time.

### National Defense Committee

The National Defense Committee reported the following with regard to recent national defense acts:

6. Army Organization Act of 1950 does not, however, contain any provision requiring that, after its personnel, who are members of a learned profession, have been assigned to duties requiring performance of appropriate professional work, the surplus, if any, should not be assigned to other military duties, if their professional services are required in an appropriate capacity in National Defense work other than military work.

9. Naval officers assigned to engineering duty or to aeronautical engineering duty only, are, in accordance with the provisions of the Officer Personnel Act of 1947, authorized to perform sea and shore duty appropriate to their qualifications, but may not succeed to command, except on shore, and then only as authorized by the Secretary of Navy.

10. Naval staff officers, including those assigned to the Civil Engineer Corps, are similarly limited with regard to authority to succeed to command.

11. Naval limited duty officers are also prohibited by the Officer Personnel Act of 1947 from succeeding to command.

12. No Naval legislation available to the committee provides that Professional Engineers and other members of the learned professions shall be assigned to duties requiring the performance of appropriate professional work, nor does there appear to be any legislation requiring the Navy to release Professional Engineers and other members of the learned professions, who are not required for appropriate professional work, so that if needed, they may be made available for appropriate professional work in the National Defense program.

14. Professional Engineers, as such, or by specific professional reference, are not mentioned in the Air Force Organization Act of 1951.

15. The term "qualified members of the Air Force" is not directly defined in the Act. Thus, such definition is left to administrative action, and with it the assignment of engineer-trained personnel to duties requiring appropriate Professional Engineering. Furthermore, the Act does not provide for the release from the Air Force of Professional Engineers not required for professional engineering work, if they are required for the National Defense in civil jobs.

16. Proposed Armed Forces Reserve Act of 1951, now awaiting Congressional action, makes provision for officer personnel and enlisted personnel of the Reserve components of the Army, Navy, the Air Force, the Marine Corps, and the Coast Guard. As presently drawn in H.R. 5277, it contains no provision to insure the assignment of engineer-trained personnel to duties having qualifications similar to those usually performed in civil life by Professional Engineers or Engineers-in-Training.

24. No manpower legislation presently on the statute books or apparently contemplated, makes provision for the effective utilization of engineer-trained personnel, nor for the release to Industry for National Defense work, of engineer-trained personnel not required for the military effort.

As a result of these findings they made the following recommendations which were approved by the Board:

The Legislative Committee of the National Society be directed to present to the Congress and urge the adoption of legislation for mitigating the Professional Engineer deficiencies in the Army Organization Act of 1950, the Officer Personnel Act of 1947, the Air Force Organization Act of 1951, and the proposed Armed Forces Reserve Act of 1951, presently H.R. 5277, as outlined in paragraphs 6, 9, 10, 11, 12, 14, 15, 16, and 24 of this report.

The President of the United States be memorialized to establish an appropriate Professional Engineering and Scientific Manpower Board with authority to develop and administer policies for the effective utilization of Professional Engineers, Engineers-in-Training, scientists, and scientists-in-training in the military and the civil phases of National Defense.

### National Dues

A resolution was submitted by the Colorado Society proposing an increase in the dues paid to National. The basis of the proposal was the need to expand the activities of the Society in the face of ever-rising costs of operation. Upon motion made by the Director from Colorado, the Board decided to appoint a committee to make a thorough examination of the subject and to submit a full report for study, consideration, and acceptance or rejection to all of the member state societies. The committee is to consist of the last three chairmen of the Budget Committee, the Chairmen of the Public Relations Committee and the Executive Director. The resulting report will not only show the Society's need for increased funds but it should, also, show the justification or the lack thereof of present society expenditures.

### Membership

The membership of the N.S.P.E. as of October 31, 1951, was shown to be 24,312. While that is an increase of approximately 1,400 over the number of members for the same date a year ago, the increase is primarily due to the addition of new state societies. The report shows an actual decrease in membership in a number of the older member societies. It is difficult to account for this. Some of it is no doubt due to losses to the armed services.



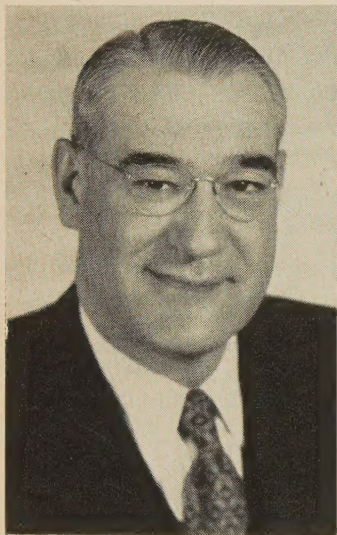
Probably the most important factor is the general uncertainty concerning conditions generally that exists in the minds of all individuals at the present time.

This report makes no pretense of being a complete coverage of the activities of the National Society. For further details the reader is urged to refer to the pages of the ILLINOIS ENGINEER, the *American Engineer*, and other publications of the NSPE.

### FRANK T. SHEETS DIES

Frank T. Sheets, 61, president of the Portland Cement Association since 1937 and nationally known highway engineer, died suddenly November 3 in Passavant Hospital, Chicago.

Mr. Sheets was graduated from the Department of Civil Engineering, University of Illinois and was one of that department's most distinguished alumni. For many years he served the Illinois Division of Highways where he attained its top position as Superintendent of Highways and Chief Engineer.



Frank T. Sheets

Mr. Sheets has served as president of the American Association of State Highway Officials, of the Mississippi Valley Highway Conference, of the Central Illinois section of the American Society of Civil Engineers. He was an official delegate from

the United States government to the Pan-American Highway Congress at Rio de Janeiro in 1929. He was the author of "Concrete Road Design, Simplified and Correlated with Traffic" presenting sound and simplified methods of designing pavements to meet traffic expectancy. An outstanding public speaker, he was constantly sought after to talk on a wide variety of engineering subjects.

With the death of Frank T. Sheets, the engineering profession loses one of its great leaders.

### CHICAGO CHAPTER NEWS

THEODORE OLSON

Room 1020, 160 North LaSalle Street, Chicago 1

#### Membership Campaign

Mr. Harold F. Sommerschild, Chairman of the Membership Committee, reports that he has 30 new members so far this year, but that we are a long way from the goal of 60 members. All members of the membership committee and all members of the Chicago Chapter are urged to work harder in order that the goal of 60 members for this year be obtained.

### Personals

Harold Hawkins, Institute of Aeronautical Sciences, gave a talk Tuesday evening, November 8th, on radio control of target airplanes at an air power and civil defense meeting conducted by the Air Force organization Chicago Group Council.

E. L. Reiter was promoted to Subway Plan Engineer of the Department of Subways and Superhighways, City of Chicago. Mr. Reiter took George L. Jackson's place with the Department when Mr. Jackson was made Bureau Chief on Superhighways for the State of Illinois, Division of Highways.

Teofil Sawicki is home from the hospital recuperating after a serious operation.

William O. Swinyard has an interesting and informative program on radar lined up for the January 8th meeting.

### Service Recognition

Certificates of Recognition for the services given the organization by the Past Presidents of the Illinois Society of Professional Engineers residing in this area. George DeMent introduced each of the following Past Presidents who were present: D. M. Campbell, L. D. Gayton, S. A. Greeley, C. J. McLean, W. W. Wallace.

The awards were presented to each of these men by Virgil E. Gunlock, our State President.

The following Past Presidents were not able to be present: C. G. Burdick, H. J. Fixmer, J. A. Moore, A. J. Shafmayer, L. K. Sherman.

President DeMent said that he would personally see that each one received the award granted him.

All of the Past Presidents who were present at the meeting discussed briefly matters of importance that happened in their administration. Such as, the publication of the Aims and Activities of Professional Engineers; Constitution and By-Laws; Adoption of the Code of Minimum Fees and Salaries; Drive for Increase in Membership Doubled; Registration Law passed and signed by the Governor. Mr. McLean brought out the fact that of the witnesses on hand at the signing of the Registration Law by the Governor, three members of the I.S.P.E. were present; also 50 per cent of the I.E.C. witnesses present were members of the I.S.P.E.

### November 6th Meeting

Mr. Herbert W. Schultz was introduced as the speaker of the evening. Mr. Schultz is an electrical engineer with the "Aerial Measurement Laboratory, Northwestern University." His subject was "Electronic Computers." He discussed the fundamental principles of various computers and described some of the work being done at the laboratory, also indicating the practical application of the computers to solving of intricate electrical and mechanical problems.

President DeMent appointed a nominating committee at this time to submit nominees for President, Vice-President, and Secretary-Treasurer for the year 1952. He appointed the following men, all past presidents, as



members of the nominating committee: Virgil E. Gunlock, W. Wayne Wallace, C. A. Walls.

These men are to report their choice of nominees at the next regular meeting in December.

### Directors' Meeting

Mr. Harold Sommerscheidt, Chapter Representative, reported the following:

1. Yearbook — The subject of a yearbook was discussed. There was considerable debate pro and con and it was finally decided that Chapter Representatives discuss the matter with chapter officers and members and inform the State Office of the consensus.

2. A report was given relative to the state office activity to get copies of the Professional Engineers' Examination questions published. It was indicated that this may be done every second year.

3. It was reported that the constitutional amendments passed.

In Mr. Sommerscheidt's report to the State Board, he expressed our disappointment at the action of N. S. P. E. to overwhelmingly vote against the resolution submitted by I. S. P. E. that registration be omitted from requirements for membership in N. S. P. E.

At the request of the executive committee, Mr. Sommerscheidt presented a motion that the State Society put pressure to bear to request N. S. P. E. to hold a National Convention in Chicago during the Centennial of Engineering in 1952. The State Board passed this motion.

A new guide for Women Auxiliary Constitution was submitted to the Board by the Constitutional Amendment Committee. It was approved as a guide for such constitutions.

## News From Chapters

### Egyptian Chapter

The Egyptian Chapter of the Illinois Society of Professional Engineers held a regular meeting on September 25, at 6:30 p. m., at the Jackson County Club near Murphysboro, with the following present:

Members: Frank Brock, J. L. Burnett, T. O. Cromeenes, Robert R. Gates, H. C. Kerwath, C. R. Riseling, Arthur Lee, George Anderson, Paul O. Hall, Carl Hindman, Fred H. Persson, D. P. Viterisi, Joseph H. Kirsch, Donald Ball.

Guests: A. T. Winston, John Lonergan, C. A. Case, William Stallman, Harry Ray, E. S. McCree, Jack Day, E. D. Harward, Charles E. Ripley, James A. Hiller, H. B. Settle, E. G. Ross, Walter Eadie, Miles G. Miller, D. D. Wright, Sam Carruthers, Lee Atkinson.

The meeting was called to order by the president, Fred H. Persson, at 7:55 p. m. The minutes of the last meeting were not read upon motion of Mr. Cromeenes. The treasurer's report of a balance of \$31.22 was accepted.

Mr. Kerwath gave a short report on our August picnic, which was very successful and very well attended. Chapter President Persson presented the Chapter's State President award to Mr. George H. Anderson in a short speech praising the work that he has done for the organization.

President Persson read a letter from the State Secretary concerning refresher courses proposed to begin in November. The chapter voted that the chapter president be authorized to act on refresher courses as he sees fit after prospects are given an opportunity to express their willingness to participate.

Mr. Joseph Kirsch, who is a member of the chapter and who is a past chapter president, spoke on the condition in Franklin County where the County Board desires to appoint a man to the position of county highway superintendent who has failed to meet the qualifi-

cations for the examination given by the Illinois Division of Highways, as required by law. It was decided that the chapter should take some action in this matter and it was voted that a suitable resolution in support of withholding certification be drawn and submitted to the Division of Highways, agreeing with its stand in withholding certification of unqualified personnel. This action provided that this resolution be submitted to our State Board of Direction for such action as it finds advisable.

The speaker of the evening was Mr. R. J. Brown, Chief of the Construction-Engineering Division, Kentucky Area, Atomic Energy Commission, of Paducah, Kentucky. Mr. Brown spoke on the non-classified aspects of the Atomic Energy Commission's program, and on construction problems at the Paducah Plant. He sketched a very informative and interesting outline of the atomic bomb development, at a wartime cost of \$2,200,000,000 within a five-year period, followed by the present AEC program, which has the objective of development for the benefit of mankind, subject to military defense needs. The AEC is now actively engaged in ore acquisition and processing, in the all-important extraction of fissionable material, in production of atomic weapons and radio isotopes, in reactor production for power purposes, and in research and development. It is an industrial program, second in size only to A. T. & T. and U. S. Steel, with 4½ billions invested in plant and equipment, with present expenditure approximately 80 per cent military which represents 2 to 3 per cent of the total national military cost. The military expenditure includes developments such as the atomic submarine and airplane, which may teach us peace time uses.

The Paducah plant is intended to produce U-235 from the pure uranium. U-235 and plutonium are the two fissionable materials used in the atomic bombs and piles.



The Paducah plant will have two large production buildings, one covering about twelve acres and the other about twenty-five acres, with auxiliary construction, total cost approximately \$500,000,000. The two power plants will cost approximately an additional \$175,000,000. The Paducah plant will use approximately 1,000,000 kilowatts of power hourly which is about  $2\frac{1}{2}$  times the amount used by Kentucky during 1949, and which represents the equivalent electricity generated by about 10,000 tons of coal daily.

Plant construction is approximately on schedule, although there have been serious work stoppages. The plant is being constructed as rapidly as possible, with present employment about 11,000 men, with peak employment not quite reached. It is hoped to start production in the summer of 1952, with completion in 1953, with about 1,600 people needed for operation.

Two very interesting color-sound movies were shown, which included many of the atomic blasts. A long discussion period followed.

J. L. BURNETT, *Secretary-Treasurer.*

### DuKane Chapter

The regular November dinner-meeting was held at the Red Lion Inn with 24 members and guests being on hand to enjoy a delightful roast capon dinner.

The business meeting was called to order at 8:50 p. m. Following the introduction of guests, the minutes of the October meeting were read and approved.

Chapter Representative Rob Roy reported on the last Directors' meeting which was held in Chicago. Among the matters discussed at the meeting was the question of the feasibility of publishing a yearbook, and the alternate methods of publishing the names of the members of ISPE. Motion by Engineer Cash, seconded by Engineer Watson, and unanimously carried that the Chapter go on record as favoring the publication of the ISPE member roster in the *Illinois Engineer*. The formation of a Ladies' Auxiliary to the DuKane Chapter of ISPE was brought up in view of the fact that some chapters now have some activity in that direction, but no action was taken. The ISPE Directors favor holding both National and State Society conventions in Chicago this year to coincide with, and in deference to, the 100th Anniversary Convention of ASCE, but it appears that the National convention will stay in Texas. The importance of "Engineers' Week" (February 17-23, 1952) was stressed.

At the election of 1952 officers, the motion by Engineer Cash, seconded by Engineer Bertrand, that the nominations be closed, was carried. A motion by Engineer Cash, seconded by Engineer Lamp, that the nominating committee's slate of officers be unanimously elected, was unanimously carried, and the 1952 officers are:

President—Douglas E. Dreier

Vice-President—Waldemar A. Rakow

Secretary-Treasurer—George M. Booth.

Chapter Representative Rob Roy's term does not expire this year.

It was announced that the December meeting would be Installation Night for the new officers and that we would also have "Ladies' Night" at the same time. The program for the evening will include a colored movie and lecture presented by Carl Kienzle, an Elgin business man, on the extensive air tour and African game hunting expedition from which he has recently returned. An excellent dinner is promised and a large attendance is hoped for and expected.

Engineer Fred Lamp introduced Mr. Carl R. Norlander of Elmhurst, an engineer with the Revere Copper Company, who presented an interesting talk and colored movie on the processing and production of commercial copper.

President-elect Dreier called an executive meeting to be held at the Aurora Elks Club at 6:30 p. m. December 6th. All past presidents are urged to attend.

Meeting adjourned at 10:15 p. m.

GEORGE M. BOOTH, *Secretary.*

### Rockford Chapter

#### First Fall Business Meeting—October 19, 1950

Place—Auditorium, Central Illinois Electric and Gas Company.

Announcement of meeting advertised by postcard through chapter mailing list.

Officers present—Charles N. Debes, President; Warren Johnson, Vice-President; John G. Duguid, Chapter Representative.

Officer absent—Lyle Porter, Secretary.

Attendance—19.

1. Charles Debes called the meeting to order at 7:45.

Business at hand: John Duguid to keep the minutes of this meeting in the absence of Lyle Porter.

Secretary-treasurer report not available for reading; postponed until next meeting.

Mr. Debes gave a brief summary of the State Chapter reports with emphasis on the subjects of civilian defense and Society membership interest.

Mr. Debes announced to the Society the nomination of Mr. Robert Stringer as Rockford Chapter candidate for the vacant post of Junior Engineer representative to the State Board of Directors.

Mr. Debes presented a newspaper article announcing the Engineering Centennial planned for the City of Chicago in 1952 and suggested participation in the centennial by the Rockford Chapter of I. S. P. E.

2. Mr. Debes requested committee reports:

A. Membership Committee: Mr. Warren Johnson reported one new member (name not given). Mr. Johnson announced a supply of booklets covering membership in the Society available upon request and to be used as an aid in securing new members. Mr. Johnson headed a brief discussion of member interest in committee work.



B. Committee on Junior Engineering Counseling—Mr. Riedesel:

- (1) Mr. Riedesel reported a dinner meeting of his committee held at Hicks the evening of October 19th prior to the chapter meeting during which the problems confronting this committee were discussed and plans for future activities were made.
- (2) Mr. Debes invited discussion on Society membership interest in attending meetings. Mr. Riedesel suggested a fixed calendar year in advance for future meetings.
- (3) Mr. Debes concurred with Mr. Riedesel's suggestion and recommended the Rockford Chapter membership and mailing list be sent a copy of a fixed schedule of meeting dates together with copies of the Rockford Chapter constitution and by-laws.

C. Mr. Haines commented on Fees and Salary Committee:

- (1) Mr. Debes suggested the subject of Fees and Salary should be brought before the public by the Public Interest Committee.
- (2) General discussion as to ways and means of accomplishing this end were tabled as follows:
  - (a) To invite individual professional men, city officials, industrial leaders, etc. to chapter meetings for discussions and to bring out their opinions on fees and salaries.
  - (b) Suggest that city officials consult with engineering societies when requiring the services of qualified engineers and that city officials be brought to realize the importance of retaining qualified engineers in their respective organizations.
- (3) Mr. Debes announced that at some time within the next ten days, he will call a board meeting for the purpose of assigning a Fees and Salaries Committee. The function of the committee to be found by the N. S. P. E. code of ethics.
- (4) Mr. Riedesel brought out the point that due to the present shortage and forecast future shortage of engineers, now is the opportune time to present our problems to the public, especially our thinking on the subject of professional recognition and fees and salaries of the engineers. Mr. Riedesel presented the Engineering Joint Council report on shortage of engineers.

D. Mr. Debes asked for the Public Interest Report from Mr. Galvanoni.

- (1) Mr. Galvanoni discussed the subject of public acceptance of engineer's recommendations for fluoride water treatment. Mr. Galvanoni made a motion that the Rockford Chapter prepare a petition requesting action by the city councils of both Rockford and Freeport on fluoride treated

water. Petition to cover area within the jurisdiction of the Rockford Chapter, I. S. P. E. Petition to cover type of equipment to be used for treating water. Further suggested that the Medical and Dental Societies be asked for their opinions and recommendations on the subject of fluoride treated water.

- (2) Motion by Mr. Galvanoni tabled for further discussion at next meeting.

E. Mr. Debes asked for report from Program Committee—Chairman, John Duguid:

- (1) Mr. Duguid reported that plans are being made to secure the services of Mr. Gunlock, President, I. S. P. E., for a talk on Civil Defense at our November meeting. Date of November meeting pending on reply from Mr. Gunlock.
- (2) An effort is being made to obtain the Elks Club facilities for this meeting.
- (3) Mr. Duguid gave a report on the questionnaire postcards circulated through our mailing list and requested members of the chapter to aid in contacting names or mailing list of persons who did not send in the data requested—especially as to their desire to remain on the chapter mailing list.

F. Mr. Debes asked for report from Committee on Engineers Counselor Service. Mr. Riedesel, chairman, reported as follows:

- (1) Committee attended dinner meeting at 6:00 p. m. October 19th to discuss the subject and plot future course of action by committee. The committee members will contact high school officials in regard to meeting with faculty or family members to give counselor service toward encouraging students to enroll in engineering courses of study.
- (2) Mr. Robert Stringer reported contacts with Rockford high schools and considerable work done in counselor service during this year.

G. Mr. Debes asked for report from Legal Analyzing Committee, Mr. W. Ades:

- (1) Mr. Ades reported no action other than making an effort to make contacts for securing legal information and that his committee is awaiting further instructions on function of Legal Analyzing Committee.

H. Mr. Debes asked for report from Committee on Weather, E. Groncki:

- (1) Mr. Groncki: No report.

3. Mr. Debes asked for motion to adjourn meeting.

4. Motion by Mr. Galvanoni, seconded by Mr. Johnson. Meeting adjourned at 10:30 p. m.

JOHN G. DUGUID, for/and in absence of  
 LYLE B. PORTER, *Secretary*.



## Madison County Chapter

The November meeting of Madison County Chapter was held on the evening of Tuesday, November 13, 1951, in the Conference Room of Alton Box Board Company, at Alton.

President Shanahan gave a report on the November 3 meeting of the Board of Direction. On the matter of Year Book plans, chapter action recommended support of Plan No. 6, to support the Year Book by sale of advertising.

Chapter officers elected for 1952 were:

President—C. H. Sheppard  
 Vice-President—Mal Graham  
 Secretary-Treasurer—Morgan Corlew  
 Chapter Representative—George Shanahan  
 Executive Committee—A. G. Adams, Les Meyer,  
 Charles Graves.

Chairman Flagg of the Membership Committee gave a report, with suggestions for bringing any delinquent members "back into the fold."

Civil Defense Chairman Corlew presented statistics on Russian developments, from a two-weeks active duty course at Peoria.

Having patiently waited through the business part of our meeting, Mr. Julian Valette of the General Electric Company spoke on "The Wonders of Water." The motion picture following was entitled "Pipeline to the Clouds," and pamphlets were distributed which urged support of the local waterworks program.

L. K. MEYER, *Secretary*.

## Kewanee Chapter

The November meeting of the Kewanee Chapter, Illinois Society of Professional Engineers, was held in the Club 19, Galesburg, Illinois, on Tuesday evening, November 20, 1951. The meeting was called to order at 7:00 p. m. by President Lee Osborn. A fine steak dinner was served.

After introductions around the table the secretary read the minutes of the last meeting, which were approved. A letter from Mr. Allan Boudinot, member of the Civil Defense Committee, was read, in which he requested that he be relieved from his duty as member of the Civil Defense Committee inasmuch as he was not qualified for such a position. His request was granted and therefore President Osborn appointed Mr. R. J. Schaffhausen to fill the vacancy.

The question of the December meeting was discussed and, it being Ladies' Night, some discussion was had as to the type and kind of a meeting for such an occasion. It was moved by Hardine and seconded that the Illinois Society President, Mr. Virgil Gunlock, be invited to speak before the meeting on Civil Defense. This was referred to A. D. Spicer to contact the State President for the engagement.

Chapter Representative Louis Pappmeier gave a talk on the recent meeting of the State Board of Directors

held in Chicago and of the service that has been done by the employment service which the Illinois Society and other Engineering groups are doing in the country. He spoke of the formation of a Ladies' Auxiliary in connection with local chapters and it is being tried out in a chapter in Illinois. Mr. Pappmeier told of the 100th anniversary made by other societies throughout the nation in honor of the oldest of the founder societies. Other topics of interest were the Engineering Fair to be held in Chicago the coming summer of 1952, and the plan to publish a Society directory in which were to be included the by-laws and the code of ethics. Several methods of finance were discussed regarding the manner to raise funds to print these in book or pamphlet form. After some discussion, it was moved by William Barnes and seconded that the chapter go on record as favoring being assessed the sum of \$1.00 each to cover the cost of printing and mailing. This was the recommendation of the chapter to our Chapter Representative, Mr. Louis Pappmeier, for his introduction at the next State Board of Directors meeting.

President Osborn mentioned Engineers' Week which is to be held in the latter part of February and appointed the following committee to serve on an Engineering Week program: John Procter, Robert Stanley, Louis Charlet, George Lindsley, Don Swanson, John H. Weber and William Barnes.

President Osborn appointed Bronson, Weimer and Bates as a nominating committee for the new officers to serve the 1952 term.

Mr. John H. Weber introduced Mr. Frank Snyder of the Peoria Tractor and Equipment Company, who showed a picture on American highways, their construction and needed repairs. The picture being in color and sound was enjoyed by all.

Meeting adjourned at 10:00 p. m. with the attendance of thirty-two members. C. F. BATES, *Secretary*.

## Capital Chapter

A new meeting place was tried at the meeting of October 30, 1951. Thirty-six members and guests enjoyed a Swiss steak dinner at the Lincoln Park Pavilion. A short business session followed dinner, with three committee reports.

Program Chairman Chenoweth reported that the next meeting will be held on the last Monday of November and Past State Presidents and older members of the chapter will be honored.

Jim Williams, Civic Affairs chairman, requested that all hay fever reports be turned in so that a tabulation of results can be made.

J. P. Murphy reported that a new Civil Defense Administrator has been appointed and active participation of this project is expected soon.

Acting President Art Kessel appointed the following Nominating Committee who are to report at the November meeting: Harry Cordes, chairman; Truman Flatt,



Richard Nankivil, Gordon Sallee, H. A. Spafford, Robert Tarr.

Mr. R. B. Thomas, of the Illinois Commerce Commission, introduced the speaker of the evening, Mr. Frank Reed of the Illinois Central Railroad. This is the 100th anniversary of the I. C. and Mr. Reed traced the growth of the railroad and showed how its progress and the development of the Middle West were worked out together during this period. A movie, prepared by the railroad, was shown further depicting the points brought out by Mr. Reed.

Meeting adjourned at 9:15 p. m.

LESLIE F. RYBURN, *Secretary*.

### Central Illinois Chapter

A very successful Ladies' Night program was held by the Central Illinois Chapter of the Illinois Society of Professional Engineers on October 25, 1951, with 84 members and guests in attendance. Out of town guests included Assistant State Secretary P. E. Roberts and Mrs. Roberts, Past State President George Ekblaw and Mrs. Ekblaw, Mr. J. J. Woltman of Bloomington, and A. D. Spicer, State Vice-President, of Kewanee.

Through the courtesy of Gus Cuffitelli, manager of the local airport of the Ozark Air Lines, a number of very excellent colored travel films were shown. Two of these films showed many of the beauty spots up and down the east and west coasts of South America. A third film covered Cuba and other Caribbean scenery.

After an intermission, two more films were shown for those who cared to stay a little longer. These pictures showed Arizona and Old Mexico. Most of the films had many scenes taken from the air, and we recommend these to any chapter that may wish to obtain them from the Ozark Air Lines.

The decorating committee for the occasion consisted of Mrs. George B. Richardson, Mrs. H. S. Nelson, and Mrs. J. L. Howie, who did a very thorough job of carrying out the autumn theme with colored leaves, fruit, the horn of plenty, etc.

P. E. Roberts spoke briefly about the Ladies' Auxiliary which is now being considered for the Central Illinois Chapter. A chairman pro tem has been appointed to call an organization meeting. Twenty-three ladies expressed their interest in such an organization.

President Dr. Herman Dorn presented Past Presidents' certificates from the State office to the following Past National and State Presidents: J. J. Woltman, of Bloomington, Past State President, 1926; Alex Van Praag, Past National President and Past State President; E. E. Cooper, Past State President, and W. D. P. Warren, Past State President, 1927.

F. E. TROXEL, *Secretary-Treasurer*.

When wealth is lost, nothing is lost—when health is lost, something is lost—when character is lost, all is lost.

*George Eliot*

### TESTS SHOW HOW DRIVER AFFECTS FUEL ECONOMY

While the efficiency of engines and fuels has increased approximately 50 per cent in the past 25 years, economical operation of a motor vehicle still depends upon the driver.

The truth of this has been amply demonstrated both in factory tests and in numerous independently sponsored economy runs.

Comparison runs recently conducted by test drivers and engineers of an automobile manufacturer showed how much fuel economy can be increased through proper handling.

The drivers found that by adjusting their city driving to the flow of traffic and to the timing of traffic signals, they could cut fuel consumption nearly in half. By lowering open country speeds from 70 to 50 miles per hour, savings of 25 per cent were achieved.

On a 62-mile city test run, one driver moved with the traffic and timed his speed to match the setting of traffic lights. He used a little more than half as much gasoline as another driver who tried to make time and stay out in front of traffic. The careful driver took only three more minutes to cover the distance.

The company's chief engineer of experimental testing said, "Our tests show that the driver pretty much determines whether his car will get the fuel economy the engineers have designed into it."

On cars with regular gearshifts, maximum economy was achieved when gears were shifted quickly, rather than after considerable speed had been reached. At 20 miles per hour, for example, low gear gives 35 per cent less fuel economy than high gear.

The following tips on economical driving were passed on by a driver who piloted his car to a first place prize in the Grand Canyon Economy Run last spring:

A light foot on the throttle can save half your gas when starting and shifting gears.

Go easy on the accelerator when the engine is cold. A cold motor uses twice as much fuel as a hot motor because only a small part of the gasoline is completely burned.

Fill the gas tank often—air in the tank mixes with the fuel and leaves moisture which may cause corrosion inside the motor.

Never overload the engine. Come down in gear shift as necessary, avoid surging the throttle and let the motor act as a brake in stops.

Criss-cross tires every 5,000 miles. Keep tire pressure at the exact level—no more, no less.

Use the right oil weight. Incorrect weight can cost as much as seven-tenths of a mile per gallon.

Keep the air filter clean. Change exhaust lines and muffler every 30,000 miles.

Make sure all battery connections are tight and corrosion-free and that brakes are checked every 10,000 miles.



## 50 YEARS AGO—AN ERA BLEW IN WITH A GUSHER

The fiftieth anniversary of a famous oil discovery was celebrated in Texas last January.

Just 50 years ago, the first great Texas gusher blew skyward. It was an event, however, that had significance far beyond the borders of the Lone Star State. Happily timed with the first appearance of mass-produced motor cars, it symbolized the birth of a new and bountiful era.

At 10:30 a.m., January 10, 1901, on a bleak hill called Spindletop, near Beaumont and the Gulf Coast, an immigrant engineer and his crew struck the richest oil pool known in their time. The engineer, Captain Anthony F. Lucas, was confirming his determined belief that the great salt domes along the Gulf were natural oil reservoirs.

His confirmation came suddenly, after one failure, and after 2½ months of arduous drilling on a second well. With the bit down to 1,160 feet, Spindletop blew in with a roar, sending pipe, mud, and a black geyser of oil 200 feet into the air.

It took Lucas and his men nine more days to cap the tremendous flow. Meanwhile, it poured some 800,000 barrels of oil on the surrounding land—nearly as much as the entire state of Texas had produced during the previous year.

News of the Lucas gusher touched off a spree of speculation and prospecting. Fifty-thousand fortune seekers descended upon the 9,000 regular inhabitants of Beaumont. Within the year, 138 producing wells studded Spindletop.

The flood from Spindletop boosted Texas oil production to nearly 4½ million barrels in 1901. Since then it has risen at a phenomenal rate to a peak 903,318,000 barrels in 1948—46.3 per cent of the nation's output.

Thus, almost overnight, America awakened to the vastness of its petroleum resources.

Black oil from the earth, however, was far from being a novelty in 1901. It had been 41 years since the Drake discovery in Pennsylvania. But, the known oil reserves were small and production had been meagre, geared to lamp and buggy needs. There was no precedent for Spindletop.

It was still a lamp and buggy age when Spindletop blew in and users for petroleum oil were limited. The first impact of this tremendous new supply from Texas immediately depressed the market. Suddenly, oil was overplentiful and the price fell to a record low of three cents a barrel.

One of the financial backers of the Spindletop venture was fabulous John W. ("Bet-a-Million") Gates.

During the negotiations, he is said to have asked Lucas, "Suppose you do find oil? What are we going to do with it—feed it to the Longhorns?"

This remark might have been more prophetic than humorous, had it not been for the coincidental timing of certain activities in Michigan.

As Lucas, the intrepid oil explorer, roamed the Gulf Southwest in search of salt domes, foresighted mechanics in the Middle West tinkered with internal combustion engines and hitched them to buggy wheels.

Not long after Lucas opened the great Spindletop field, these men to the north had applied the first principles of mass production—subcontracted manufacture, interchangeable parts, and line-flow assembly.

By the time some of the commotion had died down in Beaumont and Spindletop was producing in earnest, the infant automotive industry was turning out thousands of gas buggies.

Thus, these separate but coincidental activities merged to usher in the gasoline age.

Here was the beginning of a transportation revolution, in fact the beginning of a transformation affecting almost every aspect of life in America.

Fueled and lubricated by petroleum products, the first crude self-propelled buggies were to grow into streamlined, efficient, individualized transport tools. In 50 years, they were to be 40-million strong—more than one for every four persons in the nation.

In addition there were to be some eight million trucks that would help to multiply the output of industry and agriculture and to broaden the distribution of their products.

The land would be laced by a network of all-weather highways, linking cities, mines, factories, and farms. Great undeveloped regions would be opened, their newly-tapped resources adding to the strength and prosperity of America.

New businesses, unheard of in 1901, were to appear along the highways, serving streams of travelers. Highway transportation would provide some nine million Americans with jobs, including those in petroleum refining.

Spindletop helped make all this possible. At the same time, motor vehicles put our new-found petroleum resources to work.

Today, cars, trucks, and buses in the country consume about 35-billion gallons of gasoline a year. To supply this and other needs, U. S. wells pump nearly six million barrels of oil a day.

Before the advent of automobiles, the gasoline fraction of petroleum oil was little more than a nuisance. The demand was for naphtha, kerosene, lubricants, and waxes.

Also during the first 60 years of the petroleum industry, chemists had little interest in crude oil. No one dreamed that some day, black oil would be turned into tires, tooth brushes, steering wheels, sheer stockings, and men's suits.

But, the automobile's thirst for gasoline set chemists hard at work to find better ways of cracking heavy petroleum molecules. This led to the discovery of oil's infinite chemical possibilities.

From a national volume of less than 100 tons in 1925, production of chemicals from petroleum has risen to a



current annual rate of 2½-million tons. This represents fully one-half of the United States' total output of synthetic organic chemicals.

In such ways have motor vehicles and petroleum complemented one another through the half century.

As one thing leads to another, the mere demand for gasoline opened a whole new realm of chemistry which already has brought countless benefits to mankind.

*"Automobile Facts"*

## NEW PUBLICATION ON FLOW CHARACTERISTICS OF ILLINOIS STREAMS

The Illinois Department of Public Works and Buildings, Division of Waterways, working in cooperation with the U. S. Geological Survey, Water Resources Division, has just released a 310-page publication entitled "Water-supply Characteristics of Illinois Streams."

This study, financed jointly by the two organizations and published by the Division of Waterways, of which Thomas B. Casey is Chief Engineer, was made in the Champaign office of the Geological Survey under the technical supervision of William D. Mitchell, whose name appears as author. Mr. Mitchell is a hydraulic engineer working under the administrative supervision of Mr. J. H. Morgan, District Engineer.

The report deals with the long-term flow characteristics of Illinois streams, and is based on interpretative studies of the complete records for 28 of the oldest and most representative of the stream-flow gaging stations maintained by the Geological Survey in Illinois. More than 750 station-years of record were used for the development of curves of flow duration, discharge available without storage, draft-storage relations, and residual mass diagrams. In addition, new methods and techniques are presented whereby these same characteristics may be estimated for other drainage areas for which only short-term records, or even only miscellaneous discharge measurements, are available. These new methods should be of widespread interest, as their application is not confined to Illinois, but may be applied by other hydrologists to other areas in which they may be interested.

This is the second of a series of reports prepared by the Geological Survey and published by the Division of Waterways. The first, entitled "Unit Hydrographs in Illinois," was released in 1948.

Copies of the new publication may be obtained by request to the Division of Waterways, Springfield, or the U. S. Geological Survey, Champaign, Ill.

## ENGINEER LACK MAY BE CRITICAL

*from Chicago Tribune*

American industry is facing a shortage of engineers that could become critical in the next two or three years, H. N. Muller, Jr., assistant to the vice-president of Westinghouse Electric Corporation, warned recently.

"During the last two years United States engineering schools graduated approximately 50,000 young men each

year and this tremendous number was assimilated by industry very rapidly," he said. "But even last summer a shortage was becoming apparent.

## Seniors Have Choice of Jobs

"In 1951 we are going to have about 32,500 new graduates added to our technical reservoir. We know that this figure is not enough as is evidenced by the scramble for men on the campuses of the country this spring. It is not uncommon to meet an engineering senior walking around with five or six job offers in his pocket.

"Looking beyond 1951 we run headlong into a more serious situation. According to estimates from the United States office of education, in 1952 the number of graduates will decline to 25,000; by 1953 to 20,000, and by the year 1954, statistics indicate a maximum of 17,000 engineering graduates."

Muller warned further that these were optimistic estimates because they presume that none of these men will be taken into the military services, a condition that "obviously won't obtain."

## Must Utilize Brain Power

He said that for the first time in history the United States faces the possibility of war against a foe of vastly superior numbers and this prospect makes it more important than ever that America's man power be used most effectively.

"Maximum utilization of technical brain power and the products it conceives is the only way to win against sheer numbers," he said. "Some of this brain power must be in the military, but an even larger share must be in necessary civilian pursuits. We should frown severely on any policy that allows our young men in engineering colleges to enlist in the military in droves, just out of panic."

## HOW IS YOUR DRIVING I. Q.?

R. A. LONIER

*(Editorial in Illinois Highway Engineer)*

Are you one of those men who has a different personality behind the wheel of an automobile than in the home, office or golf course? Are you a genius in your profession and a moron as driver of a car? We have frequently heard of men who were gentlemen in their offices, but bears in their home. The annual toll of deaths, injuries and property damage due to automobile accidents is so staggering that it leads one to question the sanity and intelligence of the average automobile driver in comparison with his behavior in other activities.

True it is that a few accidents, a very few, can be classified as unavoidable or due to no fault of the drivers, such as the breaking of a steering mechanism or other similar mechanical defect. But by and large, the vast percentage of accidents is caused by reckless, careless or unthinking drivers.

Head-on collisions would not happen if both drivers kept their cars in the proper lane. Rear-end collisions would not occur if the driver of the rear car kept a safe



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distance back and was alert in his driving, or the driver of the forward car gave the proper signals for slowing and stopping. Collisions at intersections could be avoided if drivers obeyed signs and signals placed there for their protection. Accidents due to driving off the road are inexcusable and would not happen if drivers drove at speeds that are safe for the type of pavement surface, or drove only when wide awake and sober.

Knowledge of the traffic laws and regulations is no criterion of a safe driver, although it is helpful and shows a driver's interest in law enforcement. Safe driving depends entirely on intelligence and common sense. It is a sign of low intelligence to drive when fatigued or after drinking alcoholic beverages even moderately. It is senseless to race with other cars on the highway, to cheat on stop signs, to weave in and out of heavy traffic, to speed and "slap" brakes, to fail to keep all parts of your car in good working order, to turn or stop without signaling, to cheat on posted speed zones.

The driver with the high I. Q. is the man or woman who is not baited into speeding by other drivers, who gives way to the traffic violator, who comes to a full stop at stop signs and signals, who keeps his car and his temper under full control at all times, who has patience for the movement of pedestrians and slower moving vehicles, who does not cuss out loud or under his breath the driving of others, but saves his breath and his heat to better his own driving.

The man with the high driving I. Q. saves lives, suffering and damage daily, perhaps more than he realizes. The man with the low driving I. Q. lives only with the consent of Lady Luck who in this case seldom smiles. What kind of a driver are **You?** Are you an angel at home and office, and hell on wheels? What is **your** driving I. Q.?

## **MOTORIZED FARMERS HAVE INCREASED YIELDS WITH REDUCED MANPOWER**

American farmers have posted a phenomenal record during the past decade.

With no increase in available land, they have stepped up the production of food more than 30 per cent, while their work force has been cut nearly 20 per cent.

In a period of national defense, this amazing demonstration of productivity takes on added significance. Food production and available manpower are two of the most important ingredients in building a military force and in providing the weapons and supplies that are needed.

The internal combustion engine has played a leading role in improving the efficiency of American farmers.

Since 1941, the number of trucks on farms has risen to 2½ million, nearly double the 1.3 million before the war. Farm passenger car ownership has climbed from 4.3 million to 5½ million today. Tractor use on farms has jumped from 1.7 million in 1941 to about 3.4 million.



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Recent Federal studies have revealed that the farmer's passenger car is one of his most essential tools. About 70 per cent of all farms have at least one passenger car today. They are used for essential trips to town, for hauling farm products in trailers and in conducting other farm business.

For example, one survey has shown that 67 out of every 100 miles traveled by the average farm car are directly connected with making a living. Of all the trips the average farmer made by car, 78 per cent were for "necessity" purposes.

A recent U. S. Department of Agriculture survey points up graphically how motor trucks not only help farmers produce more for each hour of labor, but how they enable much wider distribution of farm products, with a sharp reduction in spoilage.

Nearly 90 per cent of all farm products now go to initial markets by motor vehicle. This includes 91 per cent of all grains, 83 per cent of all fruit, 82 per cent of all vegetables, 97 per cent of all milk, 96 per cent of all poultry, eggs, and cotton.

On the farm, light trucks are the real "work horses." Published data by the Office of Defense Transportation during World War II showed that of all trucks used for agricultural purposes in the United States, over 97 per cent were rated at 1½-ton capacity or less. Currently, 92 per cent of all farm trucks are classified as light vehicles.

*Highway Highlights.*

## LITTLE CHANGE IN TRAFFIC SPEEDS ON RURAL ROADS

The average speed of motor vehicles on main rural highways during 1950 was 47.6 miles per hour, the same as for 1949, according to the Bureau of Public Roads. Speeds by type of vehicle classified by passenger cars, trucks, and buses, were also approximately the same for the two years.

Twenty eight states reported the results of 819 speed studies conducted on main rural highways during 1950, including observations of 279,719 vehicles.

Is it legal for a man to marry his widow's niece?



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## MEN AVAILABLE

**Works or Plant Mgr.** 42. Two and one-half yrs. superintendent, designing tooling dies molds, plant layout, prod. eng. and systems of control sheet metal products. Twelve yrs. works manager, prod. control, directing research, manufacturing methods, personnel, plant layout and planning on hearing aids. Chicago. \$10,000. 218PE

**Office Engineer.** Ph.D. C.E. 32. Three yrs. part time instructor in soil laboratory. Some drafting. Three yrs. surveying and design work on irrigation structures for hydrological survey. Chicago. \$4,000. 219PE

**Production Eng.** M.E. 34. One yr. and one-half production controller, tooling, planning and scheduling, production records and standard costs. One yr. resident eng., planning, installing and administering incentive plans, methods improvements. Two and one-half yrs. investigated client firms and did detailed writing on facilities planning, production control. Midwest. \$7200. 220PE

**Plant Engineer** (Construction-Maintenance Design). M.E. 29. Four yrs. inspected oil refinery equip., supervised const., administration and field supervision of const. work. \$5400. Midwest. 221PE

**Plant Manager.** M.E. 42. Six yrs. superintendent of mineral products plant and by-product electric power, establishment and supervision of programs, procedures and standards. Four yrs. supervising operation of power, refrigeration, heating and air condition plants. Seven yrs. supervising operation of low rent housing project. \$9,000. U.S. 222PE

**Office Engineer.** C.E. 35. Five and one-half yrs. asst. supt. constr. and maint. in charge of const. of new and maintenance of old service station facilities, estimating modernization of all bulk storage facilities, construction of a pipeline terminal, loading docks, piping systems. Six mos. designing R. R. equip. and two and one-half yrs. designing integral structures for aircraft. Chicago. \$6600. 223PE

**Statistical or Mathematical.** M.E. 48. Nineteen yrs. steam power plant testing, all mechanical equip., made schedules for overall performance. Coordinated between operating and maintenance. Leg injury, must have desk work. Has had considerable statistical and calculating background. \$3,900. Midwest. 224PE

**Elect. Supervisor.** E.E. 37. Ten mos. supervising installation and maintenance of electric and electro mech. equip. for a food

processing plant and for an educational institution. Some layout of control circuits. Seven yrs. as industrial electrician. Chicago. \$5400. 225PE

**Arch. Draftsman.** 36. Fourteen mos. design and details of structures of various kinds. Two yrs. part time work as draftsman. All exp. European. Chicago. \$3600. 226PE

**Sales Eng.** 36. Four yrs. selling refractories and chemicals to steel mills. Two yrs. time study in steel mills. Four and one-half yrs. project designer of steel mill equip. Chicago. \$7200. 227PE

**Chief Metallurgist.** Met. 43. Seventeen yrs. development of metallurgical equip., market research metallurgical investigations, process control, supervision of steel making in rolling mills and open hearths. Part of exp. also in non-ferrous fields particularly with scientific instruments. \$6500. Chicago. 228PE

**Maintenance Superintendent.** 49. Eighteen yrs. estimating, engineering, and job superintendent, setting all machines, working from 500 lb. to 125 tons coal handling equip. power house equip., conveyor steel mill equip. Midwest. \$7,200. 229PE

**Sales Engineer,** M.E. 30. One and one-half yrs. sales of folding partitions, lead X-Ray protective materials, skylights and flashing. Four yrs. industrial engineering and processing on sheet metal products and small mech. sub-assemblies as well as some electronic equip. One yr. three mos. field service work on aircraft instruments. \$6,000. Chicago. 230PE

**Development Eng.,** E.E. 27. Two yrs. general development work laboratory and board. One yr. electro-mech. testing of switching and interrupting equipt. Nine mos. development of turbines and generators. One and one-fourth yrs. sales of wire products. Chicago. \$4,800. 231PE

## POSITIONS AVAILABLE

**Office Engineer.** Grad. E.E. or M.E. Age: 30-35. Five years exp. Knowledge of office operations. Duties: Varied — assistant to department head; some personnel and office management. Must have good personality. For a consulting engineering firm. Salary: To \$6,000.00. Company will pay the fee. R-8387

**Assistant Sales Manager.** Grad. E.E. Age: To 40. Duties: Supervise home office inside sales force of high voltage switch gear manufacturer, specializing in high voltage fuses and interrupter switches. Must have sales

or application — experience with high voltage switch gear. Must be capable of supervising application engineers, sales correspondents and clerical personnel, and work closely with engineering and production control departments, and with sales representatives of other territories. Travel 25% of the time. Salary: \$8,000. Location: Chicago. R-8336

**Project Engineer.** Knowledge of offset printing. Duties: Field development liaison and service recommendations on offset duplicating experience. Salary: \$6500-\$7000/year. Location: Chicago. R-8388

**Textile Test Engineer,** Textiles. Age: Up to 35. Recent graduates or better and preferably female. Knowledge of testing textiles. Duties: Test merchandise in textile testing laboratory. Company will pay the fee. Salary: \$3600-\$3900/year. Location: Chicago. R-8389(a)

**Recent Graduate,** E.E., Electronics. Age: Up to 35. Recent graduates or better. Knowledge of testing domestic electrical equipment. Duties: Testing electrical equipment, radios, and television sets. Company will pay fee. Salary: \$3600-\$4200/year. Location: Chicago. R-8389(b)

**Quality Control—M.E., I.E. or Statistics.** Age: Up to 45. Two plus years exp. statistical quality control in small electro-mechanical equipment. Knowledge of mechanics helpful. Duties: work with chief inspector on quality control analysis and trouble shooting. Company may negotiate fee. Salary: Up to \$400 per month. For a manufacturer of recorders. Location: Chicago. R-8390

**Instructor,** Met. or M.E. Duties: Instruct basic welding, and heat treating laboratory work with opportunity to work for higher degrees without tuition. Salary: \$3000 for 8½ months. Location: Indiana. T-8391

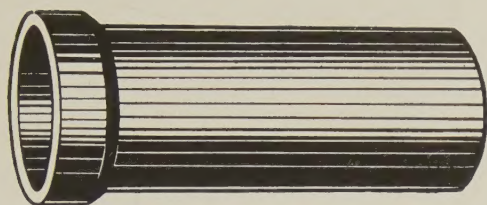
**Factory Manager,** M.E. or I.E. Age: 33-40. Three plus years exp. in well rounded supervising factory management. Knowledge of light sheet metal. Duties: Supervise factory of 800 people manufacturing light-sheet metal products, enameling and allied fields. Company may negotiate fee and moving expenses. Salary: \$10,000 to \$15,000. Location: Illinois. R-8393

**Development—M.E.** Age: 30-50. Three plus years exp. developing gasoline engines. Duties: Developing small, fractional low h.p. gasoline engines for agricultural uses. Company may pay fee. Salary: \$100-\$135/week. Location: Chicago. R-8395



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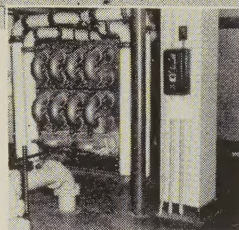
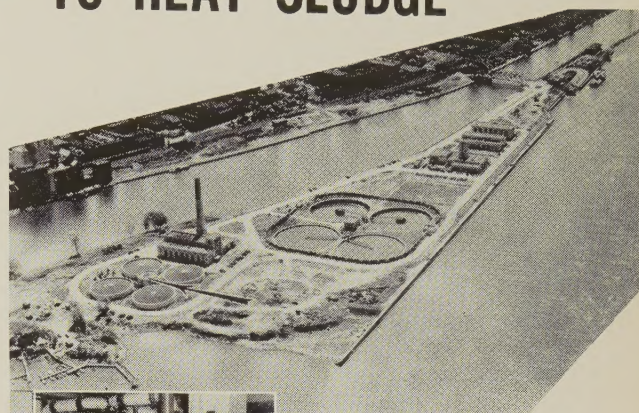
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The new Portland Cement Association research laboratories near Chicago are pictured above. These

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